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WHITE PINE WEEVIL SURVEY IN THE NORTHEAST

by

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White Pine Weevil Survey in the Northeast

During 1951 and 1952 plots were established throughout the Northeast to obtain information on the degree of white pine weevil attack in young, open grown, white pine and Norway spruce stands. It is planned to obtain annual records from these plots for a 10 year period.

Seventy plots were established in 1951 in Maine, New York, Connecticut and New Jersey. In 1952 135 plots were added. Fairly good coverage has now been obtained in New York, Maine, Vermont, New Hampshire and Connecticut. A few additional plots are needed in Massachusetts, Rhode Island and New Jersey and it is hoped that next season the survey may be extended to include Pennsylvania, Maryland and Delaware.

Summary and Analysis of Data

The following table shows the number of plots and the 1952 weeviling in the plots for each of the states.

State	Number of Plots	Average Percent 1952 Weeviling	Range in Percent 1952 Weeviling
Maine	22	3	0-25
New Hampshire	17	5	0-11
Vermont	32	4	0-29
Massachusetts	8	13	0-59
Connecticut	22	18	0-67
New York	97	5	0-51
New Jersey	7	4	0-15

The weighted average percent weeviling for all plots is 6.2. It should be noted that the number of trees attacked by the weevil and not the actual numbers of the insect in an area is being used as the criterion for weevil abundance.

Data from 60 plots which have been established in four states for two years are summarized in the following table.

State	Number of Plots	Average Percent 1951 Weeviling	Average Percent 1952 Weeviling
Maine	20	1	3
Connecticut	14	12	19
New York	19	11	10
New Jersey	7	7	4

Since the initiation of the survey there has been one change in the original specifications. This was to provide for plots in areas where no plantations existed but where young white pine could be found growing naturally. By establishing plots in such areas it was possible to get very good coverage in Maine where suitable plantations were nonexistent.

A statistical analysis of the survey plot data was made in an attempt to determine the possible effect of such factors as average height, topographic and geographic location, natural vs. planted stock, and location with respect to the natural white pine region on the degree and consistency of weeviling.

There is definite evidence that a relationship exists between average height of trees and percent weeviling. It is apparent, for example, that a disproportionately large number of plots with no weeviling were in the 1- and 2-foot class. Injury to trees less than 2 feet tall is usually insignificant. Following is a table showing average per cent weeviling for the white pine plots in various height classes.

Average Height in Feet	Number of Plots	Average Percent 1952 Weeviling
1	9	0
2	23	1
3	30	4
4	27	7
5	14	5
6	11	12
7	10	18
8	6	7
9	10	13
10	5	11
11	1	31

Having a large number of plots represented in different height classes is a desirable feature for it will continue to permit a study of the influence of height of trees on weeviling for several years. One important practical application of height-weeviling data is to assist in timing control programs.

It is apparent in many places that only a few trees remain uninjured in a plantation after they have attained a height of 4 or 5 feet. For example, no trees had been attacked prior to 1951 in a plot recently established in New York. After two years of heavy weeviling there are now only 40 percent of the trees which have not been attacked and 15 percent of the trees in this plot have already been weeviled twice. These trees are only about 4 feet high.

From the data available it was difficult to detect any striking regional differences in the degree of weevil attack. Although not statistically significant, an analysis of the data showed an apparent difference in the degree of weeviling between plots within and those outside the white pine region. Weeviling in the white pine region averaged 4.7 percent as compared to 7.3 percent outside this region.